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09/447,837	11/23/1999	IAIN A. NEIL	243/117	4341

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Glen M Kubota Esq  
Morrison & Foerster llp  
555 West Fifth Street  
suite 3500  
Los Angeles, CA 90013-1024

EXAMINER
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HANNETT, JAMES M

ART UNIT	PAPER NUMBER
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2612

DATE MAILED: 02/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/447,837

Applicant(s)

NEIL ET AL.

Examiner

James M Hannett

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 24 November 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11/23/1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments filed 11/24/2003 have been fully considered but they are not persuasive. Konno et al teaches the use of a lens barrel that has a plurality of lenses as depicted on Figure 2. Konno et al teaches on Column 2, Lines 6-10 that the camera has a focusing feature. Although Konno et al does not go into detail in the specification about the operation of the detachable lens barrel for the camera and does not specifically state that the lens barrel has movable lenses that will enable a user to focus and zoom in on the image, it is inherent based on the image depicted in Figure 1 that the lens barrel would have these features. Furthermore, the applicant argues that the prior art does not teach that the optical element receives light that is collimated and perpendicular to the surface of the filter regardless of the position of the lens groups. Johnson, Jr teaches on Column 7, Lines 65-67 that it is advantageous to place an interference filter after optics that collimate the light incident on the filter in order to increase transmittance. Therefore, as stated in the office action it would have been obvious to place collimation optics in front of the filter (8b) of Konno et al. Furthermore, since the light rays would then be collimated they would be perpendicular to the image sensor (2). As for the argument that Johnson, Jr only considers a single beam of light, not multiple beams of light, Johnson, Jr teaches on Column 7, Lines 65-67 and depicts in Figure 5 collimated light rays (66).

### ***Drawings***

The drawings filed on 11/23/1999 are acceptable subject to correction of the informalities indicated on the attached "Notice of Draftsperson's Patent Drawing Review," PTO-948. In order

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to avoid abandonment of this application, correction is required in reply to the Office action.

The correction will not be held in abeyance.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**1:** Claims 1-5, 9-13, 17-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,157,781 Konno et al in view of USPN 5,646,781 Johnson, Jr.

**2:** As for Claim 1, Konno et al teaches on Column 3, Lines 51-63 an objective lens for an electronic camera, an improvement comprising: An optical element (8b) on an optical axis of the lens and having a surface at a location along the optical axis having light rays substantially perpendicular to the surface, for causing a modification of the spectrum of light waves supplied to the camera in a manner for the camera to simulate a predetermined spectrum of light rays. Konno et al teaches the use of a lens barrel that has a plurality of lenses as depicted on Figure 2. Konno et al teaches on Column 2, Lines 6-10 that the camera has a focusing feature.

Konno et al teaches that the filter is a low-pass filter and that the filter can be replaced with any suitable filter. Konno et al does not teach that the filter has a coating on the optical element surface forming an interference filter.

Johnson, Jr teaches the use of an optical filter that has a coating of layers that are composed of low refractive index material and high refractive index material. Johnson, Jr teaches that light transmitted by this filter provides an enhanced image for viewing by the human eye as

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well as film and image sensors. Johnson, Jr further teaches on Column 7, Lines 65-67 that it is advantageous to place an interference filter after optics that collimate the light incident on the filter in order to increase transmittance.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the filter of Johnson, Jr in the camera of Konno et al in order to provide an enhanced image for viewing by the human eye as well as film and image sensors. Therefore, the light rays would then be collimated and would be perpendicular to the image sensor (2).

3: In regards to Claim 2, Johnson, Jr further teaches that the optical element (10) surface is optically flat Column 7, Lines 55-67 and in Figure 5.

4: As for Claim 3, Konno et al further teaches in Figure 2 and on Column 3, Lines 45-55 that the optical element is removable and replaceable from the objective lens

5: In regards to Claim 4, Konno et al further teaches on Column 3, Lines 59-63 a replacement optical element having substantially the same optical characteristics and without the coating. It is viewed by the examiner that because the filters that would be placed into the lens barrel would have to be the same shape and size that that constitutes having substantially the same optical characteristics.

6: As for Claim 5, Konno et al in view of Johnson, Jr teaches the claimed invention as discussed in Claim 1. Konno et al teaches the use of a lens barrel (6) that is connected to a camera (1). Konno et al further teaches the method of having a removable filter (7) placed after the lens barrel. Konno et al does not specifically discuss the workings of the lens barrel in the specification. However Konno et al supplies a depiction of the workings of the lens barrel in

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Figure 4. Konno et al depicts in Figure 1 what is viewed by the examiner to be an iris that is adjacent to the Filter (8b) in order to control the incident light supplied to the camera.

7: As for Claim 9, Johnson, Jr further teaches on Column 3, Lines 41-60 that the coating includes layers of low refractive index material and layers of high refractive index materials for producing the predetermined spectrum of light rays.

8: In regards to Claim 10, Konno et al teaches on Column 3, Lines 51-63 An optically flat element (8b) on and perpendicular to an optical axis of the lens at a location along the optical axis having substantially collimated light rays. Konno et al teaches the use of a lens barrel that has a plurality of lenses as depicted on Figure 2. Konno et al teaches on Column 2, Lines 6-10 that the camera has a focusing feature.

Konno et al teaches that the filter is a low-pass filter and that the filter can be replaced with any suitable filter. Konno et al does not teach that the filter has a coating on the optical element surface forming an interference filter.

Johnson, Jr teaches the use of an optical filter that has a coating of layers that are composed of low refractive index material and high refractive index material. Johnson, Jr teaches that light transmitted by this filter provides an enhanced image for viewing by the human eye as well a film and image sensors. Johnson, Jr further teaches on Column 7, Lines 65-67 that it is advantageous to place an interference filter after optics that collimate the light incident on the filter in order to increase transmittance.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the filter of Johnson, Jr in the camera of Konno et al in order to provide an enhanced image for viewing by the human eye as well an film and image sensors.

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Therefore, the light rays would then be collimated and would be perpendicular to the image sensor (2).

9: As for Claim 11, Konno et al further teaches in Figure 2 and on Column 3, Lines 45-55 that the optical element is removable and replaceable from the objective lens

10: In regards to Claim 12, Konno et al further teaches on Column 3, Lines 59-63 a replacement optical element having substantially the same optical characteristics and without the coating. It is viewed by the examiner that because the filters that would be placed into the lens barrel would have to be the same shape and size that that constitutes having substantially the same optical characteristics.

11: As for Claim 13, Konno et al in view of Johnson, Jr teaches the claimed invention as discussed in Claim 10. Konno et al teaches the use of a lens barrel (6) that is connected to a camera (1). Konno et al further teaches the method of having a removable filter (7) placed after the lens barrel. Konno et al does not specifically discuss the workings of the lens barrel in the specification. However, Konno et al supplies a depiction of the workings of the lens barrel in Figure 4. Konno et al depicts in Figure 1 what is viewed by the examiner to be an iris that is adjacent to the Filter (8b) in order to control the incident light supplied to the camera.

12: As for Claim 17, Johnson, Jr further teaches on Column 3, Lines 41-60 that the coating includes layers of low refractive index material and layers of high refractive index materials for producing the predetermined spectrum of light rays.

13: In regards to Claim 18, Konno et al teaches on Column 3, Lines 51-63 An optically flat element (8b) on and perpendicular to an optical axis of the lens at a location along the optical axis having substantially collimated light rays. Konno et al teaches the use of a lens barrel that

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has a plurality of lenses as depicted on Figure 2. Konno et al teaches on Column 2, Lines 6-10 that the camera has a focusing feature.

Konno et al teaches that the filter is a low-pass filter and that the filter can be replaced with any suitable filter. Konno et al does not teach that the filter has a coating on the optical element surface forming an interference filter.

Johnson, Jr teaches the use of an optical filter that has a coating of layers that are composed of low refractive index material and high refractive index material. Johnson, Jr teaches that light transmitted by this filter provides an enhanced image for viewing by the human eye as well a film and image sensors. Johnson, Jr further teaches on Column 7, Lines 65-67 that it is advantageous to place an interference filter after optics that collimate the light incident on the filter in order to increase transmittance.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the filter of Johnson, Jr in the camera of Konno et al in order to provide an enhanced image for viewing by the human eye as well an film and image sensors. Therefore, the light rays would then be collimated and would be perpendicular to the image sensor (2).

14: As for Claim 19, Konno et al further teaches in Figure 2 and on Column 3, Lines 45-55 that the optical element is removable and replaceable from the objective lens. Konno et al further teaches on Column 3, Lines 59-63 a replacement optical element having substantially the same optical characteristics and without the coating. It is viewed by the examiner that because the filters that would be placed into the lens barrel would have to be the same shape and size that that constitutes having substantially the same optical characteristics.



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15: In regards to Claim 20, Johnson, Jr further teaches on Column 3, Lines 35-40 and Column 6, Lines 17-23 that the coating on the optical filter is applied in a way to get rid of confusing wavelengths for photographic film because photographic film is optimally sensitive to the primary colors of the spectrum. Therefore, Johnson, Jr teaches the step of selecting the coating for the optical element surface for modifying the spectrum of light rays to simulate the predetermined spectrum of a film emulsion of film for a film camera. It is viewed by the examiner that the predetermined spectrum of a film emulsion of film is the optimum spectral sensitivity for the photographic film.

16: As for Claim 21, Johnson, Jr further teaches that it is preferable to place the filter after optics that collimate radiation so that the light is perpendicular to the plane of the filter. This constitutes the step of selecting the location of the optical element surface within the objective lens on the basis of the location having minimum ray incident angles at the surface.

17: In regards to Claim 22, Konno et al in view of Johnson, Jr teaches the claimed invention as discussed in Claim 21. Johnson, Jr teaches that light passes through a filter that has a surface that is perpendicular to the optical axis. Johnson, Jr does not teach that the maximum ray incident angle on the surface is 15 degrees. Johnson, Jr further teaches that it is preferable to place the filter after optics that collimate radiation so that the light is perpendicular to the plane of the filter. This constitutes the step of selecting the location of the optical element surface within the objective lens on the basis of the location having minimum ray incident angles at the surface. The examiner notes that in the specification on Page 9, Lines 5-6 That "the angle of incidence is as close to perpendicular to the optical axis as possible and preferably not more that 15 degrees at any point on the surface". Therefore, the examiner will interpret "the maximum ray incident

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angle on the surface is 15 degrees” as “not more than 15 degrees” in line with the applicants specification. Johnson, Jr further teaches that it is preferable to place the filter after optics that collimate radiation so that the light is perpendicular to the plane of the filter. Therefore, Johnson, Jr teaches that it is preferable to have ideal angles of incidence equal to zero.

Official notice is taken that it was well known in the art at the time the invention was made that in order to optimize the transfer of light through a filter that has a surface that is perpendicular to the optical axis, and that minimizing the angle of incidence preferably to an angle that is perpendicular to the plane of the filter is preferred because it increases the transmittance.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to minimize the angle of incidence of light onto the filter of Johnson, Jr in order to optimize the transfer of light through a filter.

18: As for Claim 23, Claim 23 is rejected for reasons discussed related to Claim 1 since Claim 1 is substantively equivalent to Claim 23.

19: In regards to Claim 24, Johnson, Jr further teaches that the optical element (10) surface is optically flat Column 7, Lines 55-67 and in Figure 5.

20: As for Claim 25, Claim 25 is rejected for reasons discussed related to Claim 1 since Claim 1 is substantively equivalent to Claim 25.

**21:** Claims 6-8 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,157,781 Konno et al in view of USPN 5,646,781 Johnson, Jr in further view of USPN 5,568,197 Hamano.

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22: In regards to Claim 6, Konno et al in view of Johnson, Jr teaches the claimed invention as discussed in Claim 1. Konno et al teaches the use of a lens barrel (6) that is connected to a camera (1). Konno et al further teaches the method of having a removable filter (7) placed after the lens barrel. However Konno et al does not specifically discuss the workings of the lens barrel and only supplies a depiction of the workings of the lens barrel in Figure 4.

Hamano et al teaches in Figure 1 and teaches on Column 3, Lines 40-57 the inner workings of a lens barrel. Hamano et al teaches the use of a focusing lens (6) in order to focus the image and supply an in focus image to the camera.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a focusing lens in the lens barrel of Konno et al in order to supply an in focus image to the camera.

23: As for Claim 7, Konno et al in view of Johnson, Jr teaches the claimed invention as discussed in Claim 1. Konno et al teaches the use of a lens barrel (6) that is connected to a camera (1). Konno et al further teaches the method of having a removable filter (7) placed after the lens barrel. However Konno et al does not specifically discuss the workings of the lens barrel and only supplies a depiction of the workings of the lens barrel in Figure 4.

Hamano et al teaches in Figure 1 and teaches on Column 3, Lines 40-57 the inner workings of a lens barrel. Hamano et al teaches the use of a zooming lens (4) in order to magnify the image and supply a magnified image to the camera.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a zoom lens in the lens barrel of Konno et al in order to supply a magnified image to the camera.

24: In regards to Claim 8, Konno et al in view of Johnson, Jr teaches the claimed invention as discussed in Claim 7. Konno et al teaches the use of a lens barrel (6) that is connected to a camera (1). Konno et al further teaches the method of having a removable filter (7) placed after the lens barrel. However Konno et al does not specifically discuss the workings of the lens barrel and only supplies a depiction of the workings of the lens barrel in Figure 4.

Hamano et al teaches in Figure 1 and teaches on Column 3, Lines 40-57 the inner workings of a lens barrel. Hamano et al teaches the use of a focusing lens (6) in order to focus the image and supply an in focus image to the camera.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a focusing lens in the lens barrel of Konno et al in order to supply an in focus image to the camera.

25: In regards to Claim 14, Konno et al in view of Johnson, Jr teaches the claimed invention as discussed in Claim 10. Konno et al teaches the use of a lens barrel (6) that is connected to a camera (1). Konno et al further teaches the method of having a removable filter (7) placed after the lens barrel. However Konno et al does not specifically discuss the workings of the lens barrel and only supplies a depiction of the workings of the lens barrel in Figure 4.

Hamano et al teaches in Figure 1 and teaches on Column 3, Lines 40-57 the inner workings of a lens barrel. Hamano et al teaches the use of a focusing lens (6) in order to focus the image and supply an in focus image to the camera.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a focusing lens in the lens barrel of Konno et al in order to supply an in focus image to the camera.

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26: As for Claim 15, Konno et al in view of Johnson, Jr teaches the claimed invention as discussed in Claim 10. Konno et al teaches the use of a lens barrel (6) that is connected to a camera (1). Konno et al further teaches the method of having a removable filter (7) placed after the lens barrel. However Konno et al does not specifically discuss the workings of the lens barrel and only supplies a depiction of the workings of the lens barrel in Figure 4.

Hamano et al teaches in Figure 1 and teaches on Column 3, Lines 40-57 the inner workings of a lens barrel. Hamano et al teaches the use of a zooming lens (4) in order to magnify the image and supply a magnified image to the camera.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a zoom lens in the lens barrel of Konno et al in order to supply a magnified image to the camera.

27: In regards to Claim 16 Konno et al in view of Johnson, Jr teaches the claimed invention as discussed in Claim 15. Konno et al teaches the use of a lens barrel (6) that is connected to a camera (1). Konno et al further teaches the method of having a removable filter (7) placed after the lens barrel. However Konno et al does not specifically discuss the workings of the lens barrel and only supplies a depiction of the workings of the lens barrel in Figure 4.

Hamano et al teaches in Figure 1 and teaches on Column 3, Lines 40-57 the inner workings of a lens barrel. Hamano et al teaches the use of a focusing lens (6) in order to focus the image and supply an in focus image to the camera.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a focusing lens in the lens barrel of Konno et al in order to supply an in focus image to the camera.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James M Hannett whose telephone number is 703-305-7880. The examiner can normally be reached on 8:00 am to 5:00 pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on 703-305-4929. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-842-9314 for After Final communications.


Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to customer service whose telephone number is 703-308-6789.

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James Hannett  
Examiner  
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JMH  
February 9, 2004

  
WENDY R. GARBER  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600